

Collection IM 0 - 49

Gulf, Shrimp
Boat.

May 7th, 1949,

Presented to L.O.Miles by Captain O.D.Bryant of the Shrimp Boat
"Margaret R."

Taken by shrimp net in 18 fathoms of water, at the edge of
Mexican waters approximately 80 miles south of Brownsville,
Texas

In addition to live specimens of *Buxycon canaliculatum*,
presevred and submitted,
shells of the following were
presented;

Murex fulvescens SOWERBY

Tonna galea LINNE

Tonna perdix pennata LINNE

NOTE:

Captain Bryant offers to take a collector with him at
any time and without charge.

Collection IM 1 - 49

PORT ISABEL,
TEXAS

May 8th, 1949; from 7.30 AM to 12.00 M

Taken at low water. Tides are so uniform in having little range between high and low that it has little influence on collecting.

Collected in protected inner waters at a point near the fishing docks where rocks of sandstone about 18" in diameter have been hauled in and placed to stop the erosion of the beach. Bank and bottom are of stiff clay, sand not present. The water is shallow - the off-shore channel has been dredged in recent years. The water is milky even on a calm day, from the silt it contains.

Temperature of surface water at 8.00 AM	26.0 Cent.
At 12.00 M	27.2 Cent.

Collections include :

On rocks:

Siphonaria sp
Acmaea candeana ?
Ostrea sp
Thais floridana CONRAD
Littorina ziczac GMELIN

On bottom:

Fasciolaria gigantea KIENER 6" specimen
Thais floridana CONRAD

On or in old shells:

Crepidula plana SAY
Crepidula fornicata LINNE'
Ostrea sp
Hermit crab in empty shells of Thais, Busycon
and Polinices.

EXPENSES:

Time in field collecting 4.5 hrs, travel 1.0 hr. total	5.5 hrs
Preparation of specimens	2.0 "
Total time	<hr/> 7.5 "

Use of private car	\$1.00
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May 9th, 1949; from 8.15 AM to 12.30 PM.

Protected inner waters; no surf.

At old railrad pier south of fish docks; on and about old piles and on clayey flats to the south of the pier. The shallow clay flat are overgrown with a grass-like sea weed from 6" to 12" tall. The bottom is a stiff clay and a clay silt covers everything. The water is milky.

Temperature of surface water at 8.30 AM	26.5 Cent.
At 12.30 PM	27.5 Cent.

Collections include:

On piles:

Ostrea sp. Attached.
Thais Floridana . Clinging.

On clay bottom, water 0.5' to 4.0' deep at low water.

Fasciolaria gigantea, eating a still live Thais floridana.
Thais floridana
Busycon perversum
Chione sp.

On empty shells of Busycon, Thais, Fasciolaria & Polinices;

Crepidula plana
C. fornicata
C. aculeata ?
C. convexa ?
Ostrea
Hermit crabs inside.

EXPENSES:

Time in field collecting, 4.0 hrs; in travel, 1.0 hr;	
	Total field time 5.0 hrs
Preparation of notes and specimens	2.0 "
Total time	<hr/> 7.0 "

Use of private car \$1.00

Collection LM 3 - 49

PORT ISABEL, TEXAS

May 10th, 1949; from 6.00 AM to 10:15 AM

Collected an area beginning where LM 2-49 left off, south of the old railway pier, and extending a quarter mile further south. Bottom water and bottom-growth the same as described in LM 2 - 49.

Temperature of surface water at 6.30 AM	26.0 Cent.
At 10.00 AM	27.5 Cent.

Collections were the same as those made and listed in LM 2 - 49, as of May 9th.

Collections on the tenth were made while endeavoring to secure live clams and Polinices. None were found.

EXPENSES:

Time in collecting, 4.0 hrs; in travel, 1.0 hr; total field, 5.0 hrs	
Preparation of specimens,	2.0 hrs.
Total time ix	7.0 hours.

Use of private car, \$1.00

Collection LM 4 - 49

SANTA ROSA SOUND
at CAMP NAVARRE, FLORIDA.

May 12th, 1949; from 10.00 AM to 2.00 PM, tide in; and
from 4.00 PM to 7.15 PM, low water.

Temperature of surface water	at 10.00 AM,	24.0 Cent.
	at 4.00 PM	25.1 Cent.
	at 7.15 PM	24.5 Cent.

Taken in SANTA ROSA SOUND (between Santa Rosa Island and
the mainland) at the dock at CAMP NAVARRE. The bottom
is fine sand, the water is shallow, two feet deep at
100' to 150' from shore, at any tide.
Protected inner beach.

Collections include:

From piles of small pier, mostly untreated pine and
oak, unpeeled except by wave action:

Ostrea sp. Zone 3
Mytilus 2 sp. Zones 2 & 3.
Barnacles on oysters and bark, zones 2 & 3.
Littorina ziczac Zone 1.
Crabs, several species, among oyster shells, under
bark, 7c.

From sandy bottom about the pier:

Tagelus divinus SPENGLER. A shallow burrower; 6-8"
Hermit crabs in Polinices and Melangena shells.
Crepidula plana in the same.
Callinectes ? This swimming crab can sink into the
sand backward, rapidly.

From an intertidal exposed bed of hardened sand, almost
a sandstone:

Isopods, in crannies and burrows.

EXPENSES ;

Time in collecting, 7.0 hrs; in travel, none; total 7.0 hrs.	
Preparation of specimens,	2.0 "
Total time	<hr/> 9.0 "

No cash outlay.

May 15th, 1949; from 8.30 AM to 11.30 AM

At PUNTA RASSA on the mainland shore of SAN CARLOS BAY, opposite SANIBEL ISLAND, $\frac{1}{2}$ mile east of the ferry slip. Collection made in shallows just off highway, in water up to 2' deep 250' to 300' out from shore; bottom of clean fine coral sand, with scattered patches of grass-like 8" to 12" sea-weed. In places, mangroves grow out into Zone 4. Protected inner shore.

Temperature of surface water at 8.30 AM, 27.0 Cent.
At 11.30 AM, 28.2 Cent.

Collections include:

From Zones 1 to 3:

Littorina irrorata SAY; on stumps and trees standing out of water.
Crabs with above; very alert and active.
Uca sp; fiddler crabs in great numbers.

From Zones 3 & 4:

Melongena corona; in profusion, many mating.
Limulus polyphemus LINNE'; King or Horseshoe Crab; mating.
Crepidula fornicata; on above crabs.
Hermit crabs, 2 species.
Polinices duplicata SAY. Small specimens from sand bar.
Crabs - several species.
Crepidula plana in *Polinices* shells.
Strombus pugilis shell only.
Conus, shell only.
Nassarius.
Sea Cucumber.
Pelecypoda - various empty shells.
Isopods - from a submerged old root.
Worms - with above.

EXPENSES:

Collecting, 3.0 hrs; travel, 1.0 hrs; total field time,	4.0 hrs.
Preparation of specimens,	2.0 "
Total time,	<u>6.0 "</u>
Use of private car, Fort Myers to Punta Rassa, \$1.00	

May 15th, 1949; from 3.30 PM to 6.40 PM.

On Marco Island, Florida, on a protected inner coast just S.E. of Big MARCO Pass, where a bayou empties at ebb tide. Behind an islet sand bars have formed which are mostly exposed at low tide. The bars and the bottom are coral sand, silted along the inner beach of the islet but otherwise generally clean.

Temperature of surface water fairly constant at 27.5 Cent. except in stagnant water behind the islet where the heat of the sun raised it as much as 3 degrees.

Collections include:

Cardium robustum SOLANDER
Nassaria vibex SAY
Odostoma sp.
Melongena corona GMELIN
Pugilis, *Strombus* LINNE' Plentiful.
Strombus alatus - with Hermit Crab.
Fasciolaria tulipa LINNE'
F. distans LAMARCK
F. gigantea KIENER . Note- plentiful last April, scarce now.
Cardium isocardium LINNE' Shell only.
Mellita quinquesperforata LESKE. Sand dollar.
Donax sp.
Busycon perversum Plentiful.
Pagurus longicarpus SAY. A Small Hermit crab.
P. pollicaris STIMPSON. Large hermit crab.
 Sea urchins, red. Covered by shells &c. In water 2'-3' deep.
 (*Arbacia punctulata* LAMARCK)
Asteria forbesii DESOR Common star fish.
Tethys sp. Sea Pigeons or Sea Hare. Taken while swimming.
Leptogorgia virgulata LAMARCK? A common Gorgonid in Z. 4

EXPENSES:

Collecting, 3.0 hrs; travel, 1.0 hr; total field, 4.0 hrs.	
Preparation of specimens,	1.0 "
Total Field	5.0 "
Use of private car, \$1.00	

May 16th, 1949; from 6.30 AM to 8.30 AM.

At MARCO ISLAND, Florida; on south shore of inlet draining in part, the bayou collected in LM 6 and LM 8. Tide too high to permit collecting on bars at this time of day, and this collection was from the beach shells windrowed at the outer edge of the inlet. These shells are empty for the most part, but are submitted as indicating what could be found by dredging off this shore.

Temperature of surface water at 8.00 AM, 27.0 Cent.

Collection includes:

Strombus sp. Juvenile.
 Dentalium sp.
 Donax variabilis SAY
 Terebra dislocata SAY
 Busycon perversum.
 Epitonium sp.
 Bulla occidentalis?
 Olivella jaspidea GMELIN?
 Crepidula aculeata GMELIN
 Calliostoma jujubinum m. GMELIN
 Cerithium sp.
 Plicatula gibbosa LAMARCK. Kitten's paw.
 Nassarius vibex.

also: Thais haemostoma Florida Conn.

And others, mostly small and juvenile.

EXPENSES:

Collecting, 2.0 hrs; travel, 1.0 hrs; total field,	3.0	hrs.
Preparation of specimens,	0.5	"
Total field,	3.5	"
Use of private car taken care of under LM 8, same date and same trip, but later at low water.		

Collection L M 8 - 49

MARCO ISLAND

May 16th, 1949; from 11.00 AM to 6.00 PM.

Data on this collection is the same as that for LM 6 -49, on the 15th; except that in LM 6, concentration was on the inner shore and the bar adjacent, whereas LM 8 was over the entire area, both beaches and the islet, in an intense search for large adult *Fasciolaria gigantea*, *Cardium robustum* and *Tellina*. These organisms were plentiful here last April ('48) but weren't found in '49. An explanation may be that the change in bars, both location and depth, by the winter storms, has driven them out or covered them over.

Collections:

Same as LM 6- 49. Little difference was found in the niche collected today not collected yesterday, and the rest of the area.

EXPENSES:

Collected	7.00 hrs.
Travel See LM 6	<u> </u>
Field	7.00 hrs.
Preparation of specimens	<u>2.0 hrs.</u>
Total time	9.0 hrs.

Use private car, \$ 1.00

COLLECTION L M 9 - 49

FLORIDA BAY, KEY LARGO.

May 17th, 1949; from 2.10 PM to 6.25 PM

Temperature of surface water at 2.15 PM 32.0 Cent.
 (Incoming tide) At 6.00 PM 31.5 Cent.

Taken on west (south) coast of KEY LARGO, in FLORIDA BAY, at a point 1.4 miles south of Rock Harbor Lodge. The shore is of honey-combed coral. The splash zone (1) is less than a foot above high-water mark. Zones 2 and 3 are coral rock with thin coral sand and silt pockets. Low water mark is 75' to 100' out from highwater mark, despite a tide range usually about 18", seldom over 3'. There is no surf. It is protected inner coast.

Collections include: In Zones 2 & 3 :

Fasciolaria, 2 sp.
 Fasciolaria shells with Hermit Crabs.
 Batillaria minima.
 Brown rice clam on rock bottoms.
 Keyhole limpets with above.
 Mytilus with above.
 Arca sp. with above, usually imbedded in crevices.
 Cerithium literatum BORN.
 Pelecypoda - small white clam.
 Chione sp.
 Brown clam, 2" long. On rock bottoms.
 Ascidea.
 Sponges green mat.
 Egg cases.
 Worms, in soft cases covered with shell particles.
 Crab.
 Serpulorbis sp. Mollusc in wormlike case.

In Zone 4:

Modulus modulus LINNE'
 Cerithium floridanum MORCH.

EXPENSES:

Collected	4.0 hrs;	travel	0.5 hrs;	total field,	4.5 hrs.
Preparation of specimens					2.0 "
		Total time			<u>6.5 "</u>
Use of car,	no charge.				

Collection L M 10 - 49

FLORIDA BAY, KEY LARGO.

May 18th, 1949; from 7.30 AM to 11.00 AM.

Takne in FLORIDA BAY on the south-west shore of Key Largo, at a point 2.2 miles south of Rock Harbor Lodge. The shore and bottom are similar to that collected in LM9, except that there are occasional mangrove in Zones 1,2,&3, and that the bottom slopes less rapidly and more fine coral sand is present.

Temperature at 7.30 AM, 25.0 Cent.
At 11.00 AM, 28.5 Cent.

Collections include the species taken yesterday in L M 9, plus good specimens of:

Pyrene mercatorium LINNE'
Diadora sp.
Serpulorbis decussattis GMELIN
Arca reticulata GMELIN

Note - This niche yielded many fine Murex in April, '48; but intense search failed to locate any today, except a fea juveniles on the bottom of rocks.

EXPENSES:

Collecting, 3.5 hrs; travel, 0.5 hrs; Total field,	4.0 hrs.
Preparation of specimens	2.0 "
Total time,	<hr/> 6.0 "

Use of private car, \$1.00

May 19th, 1949; from 11.30 AM to 3.30 PM.

Temperature of surface water at 12.30 PM, 29.0 Cent.

Taken on west-south coast of KEY LARGO at a point on US 1 0.8 miles north of Rock Harbor Lodge, leaving the Highway opposite the Protestant Church. The shore is of honey-combed coral rising from 0.5' to 3.0' above high-water mark. Many loose rocks, also of coral, dot the beach in Zones 1, 2 & 3. Zones 2 & 3 are only 10' to 15' wide. The bottom is coral rock covered by a thin layer of fine coral sand, and sloping rapidly to 2.0' deep at 20.0' out from low-water mark.

Collections include:

Fasciolaria distans

F. tulipa

Modulus modulus

Pinctada on sea weed.

Murex florifer (Young)

Scale worm on rock bottoms.

Worms in flimsy tubes, debris covered, on rock bottoms.

Hermit crabs

Tree oyster

Epitonium

Terebra dislocata

Melongena dislocata

NOTE: This niche also produced adult *Murex Florifer* in April, 1948; but not this day.

EXPENSES:

Collecting, 4.0 hrs; travel, 0.5 hrs; total field, 4.5 hrs.

Preparation of specimens,

Total time

1.0	"
<hr/>	
5.5	"

Use of private car, \$ 1.00

Collection L M 12 - 49.

KEY LARGO, north end.

May 19th, 1949; from 4.30 PM to 7.00 PM.

Collected along the County Road, the old highway, at a point 5.0 miles and more above (N.E.) the road fork where U.S.1 makes a sharp turn from the old highway, and crosses LAKE SURPRISE. On KEY LARGO.

Collected tree snails along the old highway, finding them generally on two species of tree. Both these trees have pinnately compound leaves, one fine like an acacia, the other coarse like a walnut; both have legume-like blossoms and seed pods. Locally they are known as Lignum vitae. But these tree snails are found on cherry trees, old dead snags, various shrubs, in fact on almost anything present. Their instinct seems to be to climb.

Collected were

Liguus fasciatus of various subspecies. However, many of the subspecies described by SIMPSON, PILSBRY and GLENCH (seperately) were not found and will be looked for on another date.

EXPENSES:

Collecting time,	2.5 hrs.
Travel time,	1.5 "
Total time, field	4.0 "
Preparation specimens	0.5 "
Total time	4.5 "

Use of private car, \$1.00

Collection L M 13 - 49.

KEY HARBOR - HAWK CHANNEL.

May ²⁶~~13~~th, 1949; from 7.30 AM to 1.00 PM.

Temperature of surface water at 8.00 AM	27.0 Cent.
At 10.00 AM	28.0 Cent.
At 1.00 PM	29.0 Cent.

On the Ocean side of Key Largo, in ROCK HARBOR, from a house on stilts 0.2 miles sw of Gordon's Pier, thence along the coast to the southwest. This is a rocky shore of honey-combed coral rock rising several feet above high-water mark. The bottom is coral rock with pockets of shallow fine coral sand. There are occasional coves of low shore line with mangroves in Zones 1, 2 & 3, and with some silt in tide pools.

Collections include:

Nerita peleronta LINNE'	Bleeding Tooth, Zone 1.
N. tessellata GMELIN	Baby Tooth, Zones 2 & 3
N. versicolor GMELIN	Red Baby Tooth, Z 1 & 2
Neritina pupa LINNE'	Zebra Baby Tooth, Z 1 & 2.
Fasciolaria sp.	Zone 4.
Pedalion alata GMELIN	Z 2 & 3.
Batillaria minima.	Z 1 & 2.
Cerithium floridanum MORCH.	Z 2, 3 & 4.
Thais deltoidea	Zone 2.
Vasum muricatum BORN.	Zones 2, 3 & 4. Sometimes buried in silt, sometimes on clean sand.
Sea Urchins, purple.	Zone 4.
Compound Ascidea, a mat on rocks,	Zone 3. & 4.
Purple Sponge, a mat on rocks,	Zone 3.
Crabs,	
Chitons.	

EXPENSES:

Time collecting,	5.5 hrs.
Travel time,	0.5 "
Total time, field	6.0 "
Preparation specimens	2.5 "
Total Time,	8.5 "

Collection L M 14 - 49

KEY LARGO, north end.

May 20th, 1949; from 4.00 PM to 7.05 PM.

Along the County Road, the old highway, but further up the Key than in LM 12 (NE). Otherwise the same habitat.

Collected Tree Snails on *Lignumvitae* and other trees and shrubs, as in LM 12; but concentrated on securing subspecies, according to SIMPSON, to PILSBRY and to CLENCH, not found in Collection LM 12. Had some success. Also found several snails of other than the *LIGUUS*; and some juvenile *Liggus*.

EXPENSES:

Time collecting.	3.00 hrs.
Travel time,	<u>1.0 "</u>
Total field time	4.0 "
 Preparation of specimens	 <u>1.0 "</u>
Total Time	5.0 "
 Use of private car	 \$1.00

May 21st, 1949; from 9.30 AM to 1.00 PM.

Temperature of surface water at 10.00 AM	28.0 Cent.
At 12.00 M	30.0 Cent.
At 1.00 PM	31.0 Cent

On the Ocean side of Key Largo at ROCK HARBOR, from Gordon's fishing pier south along the beach 0.2 miles to the area collected May 13th - LM 13. The beach and bottom are as described in LM 13, with a larger proportion of low shore and silted pockets.

Collections include:

Cucumaria sp. Most of them extruded their "insides".
 Found under and beside rocks and sponges. Z.3 & 4.
 Spider crab, small. In Zone 3, under a rock.
 Crabs - Callinectes, &c. All zones.
 Hermit Crabs, especially in empty Fasciolaria tulipa.
 Purple Sea Urchins - Zone 4, in rock pockets and crevices.
 Bryozoa)
 Hydroids) On Algae.
 Sponge, purple. Zone 4.
 Siphonaria - on rocks in Zones 2 & 3.
 Vasum muricatum - Zone 3 in silt; Zone 4 on sand.
 Littorines, small brown gastropods with bands, in clumps under rocks in Zone 1.
 Chiton - Mopalia-like. Zone 1, 2 & 3.
 Chiton - a long narrow, naked chiton; in Zones 2 & 3.

EXPENSES:

Time collecting,	3.5 hrs.
Travel time	0.5 "
Field time	4.0 "
Preparation of specimens	2.0 "
Total time	6.0 "

No car charge.

Local purchase 4 pts Isopropyl	\$1.20
2 pts Formaldehyde	1.20
Total cash outlay	2.40

Collection L M 16 - 49

FLORIDA BAY, KEY LARGO.

May 22nd, 1949; from 7.35 AM to 10.30 AM.

Temperature of surface water at 9.00 AM 30.0 Cent.

Taken in Florida Bay on West Coast of KEY LARGO, between it and Pigeon Key, at a point 0.2 miles NE of a cafe known as "My Place", and at a real estate development known as "Bay Haven". Collecting was done in a small cove made by a 100 foot jetty behind which is gathered black silt and litter over coral sand and silt. In pockets this silt is as much as two feet deep.

Collections include:

Melongena corona minor SOWERBY. IN and on muck, z 2 & 3.
Batillaria minima
Cerithidium
Fasciolaria tulipa.
F. distans with Hermit Crab.
Murex florifer with Hermit Crab.
Sarasota Red Clam.

EXPENSES:

Time collecting	3.0 hrs.	
Travel time	0.5 "	
Total field time	3.5 "	
Preparation of specimens	3.0 "	Coronas very dirty.
Total Time	6.5 "	
Use of private car	\$1.00	

Collection L M 17 - 49

FLORIDA BAY, KEY LARGO.

May 22nd, 1949; from 2.15 PM to 6.20 PM.

Temperature at 2.30 PM 30.1 Cent. Surface water.

Collection made at same site as LM 10 on May 18th, but at a further distance from the shore because of a lower tide. SW shore of KEY LARGO, 2.2 miles south of Rock Harbor Lodge.

Collection includes:

Limulus polyhemus LINNE' - young horseshoe crab (put in LM8)

Cerithium sp. Zones 3 & 4.

Batillaria minima - " 3 & 4.

Pecten irradians LAMARCK. Zones 3 & 4.

Spon/ge.

Fasciolaria.

Still unable to find adult *Murex*.

EXPENSES:

Time collecting	4.0 hrs.
Travel, time	0.5 "
Field time	4.5 "
Preparation of specimens	1.0 "
Total time	5.5 "

Use of private car \$1.00

Collection L M 18 - 49. FLORIDA BAY, Key Largo.

May 23rd, 1949; from 8.00 AM to 11.30 AM.

Temperture of surface water at 8.00 AM 30.0 Cent.

Takne in FLORIDA BAY on the west coast of KEY LARGO, at a point 0.5 miles SW of "My Place", in a small cove near HAMMER POINT. Beach varies from low coral sand to a lowcoral rock beach. The bottom is clean fine coral sand on coral rock, and slopes very gradually.

Collection made from low water to mid tide and includes:

- Callinectes - swimming crab, blue claws; Zone 4.
- Sting Ray - taken on clear clean sand bottom; Z 4.
- Fasciolaria tulipa - on sand bottom.
- Sea Anemone from bottom of rocks at Low Tide mark.
- Crab, heavy clawed, from under rock, Zone 3.
- Sponge, black finger-like - Zone 4.
- Ascidia - Zone 4 on sea weed.
- Crab - Mimulus-like, on and under loose coral rocks, Z 3 & 4.

EXPENSES:

Collecting time	3.5 hrs
Travel time	0.5 "
Field Time	<u>4.0 "</u>
Preparation of specimens	<u>2.0 "</u>
Total Time	6.0 hrs.

Use of private car	\$1.00
Alcohol, local buy	<u>.70</u>
Cash outlay	1.70

May 24th, 1949; from 10.10 AM to 3.30 PM.

On the East coast of GRASSY KEY, directly exposed to the sea. At a point off US 1 south of "Seaside Cabins" and store 0.3 miles. Sandy beach with much shell litter. Bottom slopes gradually. At low water, the water is two feet deep at 300 yards from waters edge. Bottom is of coral sand, near shore and in tide pools there is considerable silt. Patches of sea weed, grass-like and up to a foot long, cover nearly half the area. The bottom drops off into deep water, known as HAWK CHANNEL (from KEY WEST to MIAMI) at about 350 yards from shore.

Temperature of surface water at 10.30 AM, water 1' deep	28.5 C.
Water 2' "	28.0 C
At 3.00 PM. Water 2' "	29.5 C
Water 1' "	31.0 C
Water 0.5' "	33.5 C

Collections include:

Cucumaria 2 sp. Extruded insides, full of coral.
 Sponge, green club, attached to shells.
 Mytilus sp.
 Arca umbonata or occidentalis. With sponges.
 Atrina rigida - Sea pen. Smooth. Stood 6" above sand. In sea weed.
 Sponges, red - attached to Arca.
 Orange Ascidea?
 Green algae - shaped like short seed onion.
 Cup Sponge.
 Coral, branched like fingers. In clumps on bottom.
 Pelecypod - abundant empty shells. Live are in rock pockets.
 Astraea americana - shell only, with Hermit crab.
 Pagurus pollicaris SAY - in empty Cassis flammea.
 Strombus raninus - Empty winged conch.
 Fish - commensal with conchs.
 Fish - taken in ~~large~~ coral pockets.
 Crab - in pocket in black ascidea.
 Callinectes sp.
 Spider crabs - 2 sp.
 Strombus gigas LINNE' - plowing thro sea weed, 2' deep.
 Diadora listeri ORBIGNY - 1" & longer. On sunken board.
 Compound Ascidea.

EXPENSES: Time collecting	5.0 hrs;	travel,	2.0 hrs;	total	7.0 hrs.
Preparation of specimens					2.0 "
Total Time					9.0 "
Use of car	\$1.00	Toll bridge,	1.00	Formaldehyde	0.60
Total cash outlay		\$	2.60		

Collection L M 20 - 49 HAWK CHANNEL, PLANTATION KEY.

May 25th, 1949; from 10.00 AM to 2.15 PM.

On PLANTATION KEY, ocean side, 3.0 miles south of TAVERNIER BRIDGE, in HAWK CHANNEL. A 508' street, 50' wide, has been bulldozed thro from US1 to the beach at this point. The shore is of coral rock, honey-combed, and the off-shore bottom is coral, rough and pocketed with coral sand. Fine coral silt covers beach and bottom.

Temperature at 10.00 AM	in 0.5' of water	33.0 Cent.
	In 1.0' " "	31.5 "
	In 2.0' " "	31.0 "

Collections include:

From Zone 1:

Nerita
Littorines

From Zones 2 & 3, mostly from beneath rocks:

Neritas
Thais deltoidea LAMARCK
Nassarius vibex
Other small gastropods.
Crabs, 4 species.

From Zone 4.

Sea Star, long-spined purple
Sea stars, Strong.drob.
Gorgonid, purple.
Octopus sp. Small.

EXPENSES:

Time collecting	4.0 hrs.
Travel time	1.5 "
Field time	5.5 "
Preparation of specimens	2.0 "
Total Time	7.5 "

Use of private car	\$1.00
Alcohol, local buy	1.20 4 pints at 30¢.
Cash outlay	2.20

May 26th, 1949; from 10.05 AM to 2.35 PM.

Temperatures of surface water, same as in LM 20, May 25th.

Taken in HAWK CHANNEL on PLANTATION KEY, commencing at NE end of key near TAVERNIER CREEK, and collecting along ocean beach sw to where collected May 25th, LM 20; a distance of nearly 3.0 miles. Beach is coral rock, honeycombed. Bottom is coral sand in pockets in coral rock, all silted with fine coral except upper Z2 and Z 1.

Collections include:

Astraea americana)
 A. longispina) With hermit crabs.
 Crab, mottled; heavy claws.
 Crab, small, square.
 Crab, small, very alert.
 Callinectes.
 Tonna sp; small dirty shell only.
 Thais deltoidea.
 Neritas, 3 sp.
 Lucina sp.
 Strombus raninus, shell only.
 Vasum muricatum.
 Cucumaria, small; under rocks, Z 3. Extruded insides.
 Ascidea
 Nudibranch, green. Under side of rocks, in groups.
 Sponges.
 Diadora listeri.
 Mytilus sp. Small mussels attached to bottom rocks, nearly silted over; in dense clumps. Zone 4.
 Fish ; flat, black & white checks; in pools, Zone 4.
 Sea stars.
 Corallines.

EXPENSES:

Time collecting,	4.5 hrs;	travel time,	1.5 hrs;	total field	6.0 hrs.
Preparation of specimens				1.5 "	
		Total time		7.5 "	
Use private car	\$	\$1.00			
2 gals Formaldehyde		3.50			
1 " Isopropyl		1.35			
Cash outlay		5.85			

Note: Bill submitted. First chance to buy in quantity.

Collection L M 22 - 49. KEY LARGO, NORTH END.

May 27th, 1949; from 4.00 PM to 7.10 PM.

Collected along County Road, the old highway from Key West to Miami, about 7.0 miles north and east of the junction with U.S.1 which here turns west to LAKE SURPRISE.

Collections were made along the roadside and only for short distances into the woods, which are very dense and semi-tropical, heavily grown over to vines.

Collections include

Liguus fasciata of several subspecies not taken in previous collections of this species, LM 12 and LM 14.

Note: While the Liguus are most commonly found on 2 species of leguminous trees, known locally as Lignumvitae, they are found also on nearly every other tree and most shrubs but only in the vicinity of the Lignumvitae. Apparently their presence on other plants is accidental. They appear to feed only on the thin-barked lignumvitae. When removed therefrom, a wet spot is left at point of contact; and they excrete bark tissues for several ~~days~~ days after collecting. They are not operculate but when molested, withdraw deeply into their shell, looding much watery, slimy liquid in the process.

EXPENSES:

Time in collecting	3.0 hrs.
Travel time	<u>1.0 "</u>
Field time	4.0 "
Preparation of specimens	<u>1.0 "</u>
Total Time	5.0 "

Use of private car \$1.00

Collection L M 23 - 49 FLORIDA BAY, INDIAN KEY FILL.

May 27th, 1949; from 10.00 AM to 2,00 PM.

On INDIAN KEY FILL, between Indian Key Bridge and Tea Table Bridge (on U.S.# 1) on the Florida Bay or west and north side. Bottom slopes abruptly from the plank buttress of the fill, and the water is 2' deep at 20' out. Bottom is coral sand with much silt, and with occasional loose rocks hauled in. The location is 12.2 miles south of Tavernier Bridge.

Collections include:

Zone 1 :

Littorina ziczac
Tectarius muricata LINNE'

Zones 2 & 3 :

Neritina pupa LINNE
Nerita versicolor GMELIN
Ursopalinx sp.
Ostrea permolis SOWERBY; from bottom of submerged board.
Hermit crabs plentiful in small gastropod shells.

Zone 4:

Under and about loose rocks:

Small fish, "Sergeant~~major~~" type of markings.
Pedalion alata
Ursopalinx sp
Crab, heavy clawed; put in jar with others of LM20.
Callinectes.
Arca barbata LINNE'?

Swept up with net in sea weed patches.

Nudibranch, green with white spots.
Fish, small brown.
Callinectes, small.
Astraea americana GMELIN
A. longispina LAMARCK
Coral, red blocks.
Coral, yellow heads.
Sponge, red mat.
Sponge, green club.
Bryozoa, red, on shells; with Coral.
Fasciolaria tulipa.
Calliostoma euglyptum A.ADAMS ?
Tegula fasciata BORN ?
Crepidula aculeata GMELIN.
Cerithium floridanum MORCH.
Thais floridana CONRAD.
Cantharus tinctus CONRAD ?

EXPENSES:

Collecting	4.0 hrs.
Travel	1.5 "
Field	5.5 "
Specimens	3.0 "
Total	8.5 "

Use of car, \$1.00

Collection L M 24 - 49 HAWK CHANNEL, LOWER MATECUMBE KEY.

May 28th, 1949; from 10.05 AM to 3.30 PM.

On the Atlantic side of the south end of LOWER MATECUMBE KEY, in HAWK CHANNEL, beginning 150 yards north of the TOLL BRIDGE on U.S.1, and collecting northward. Collecting was done

- A. On coral rocks hauled in to build a jetty; fully exposed.
- B. On coral sand bottom well silted, with patches of the common grass-like seaweed, in water only 1' to 2' deep at low water, at over 300 feet from shore.

Collections include:

- A. From rocks of jetty:
 - Nudibranchs, green, 2" long, mating. On bottoms of rocks.
 - Ursopalinx sp
 - Cantharus tinctus.
 - Tegula fasciata.
 - Thais floridana.
 - Nerita, 2 sp.
- B. From sandy bottom in sea weed patches up to 150 yards out.
 - Crab, big claws.
 - Spider crabs, small, in old shells.
 - Crayfish, small, in old shells.
 - Arca sp. attached to old shells.
 - Astraea sp on old shells. These are old Strombus gigas.
 - Chiton - long, slender, nude. With above.
 - Fasciolaria gigantea, 8".
 - Strombus gigas LINNE'
 - Atrina rigida - upright, 65% exposed, in sand in seaweed.
 - Fasciolaria tulipa. 10".
 - Fish, in old shell.
 - Green marble-like bodies.
 - Egg cases on old shells.

EXPENSES :

Collection time	5.5 hrs.	
Travel time	1.0 "	
Field time	6.5 "	
Specimens	3.0 "	Very dirty.
Total Time	9.5 "	

Use of car \$1.00

May 29th, 1949; from 12.00 M to 5.30 PM; first 1.5 hrs
spent collecting rarer LIGUUS while tide ebbed.

Temperature of surface water at 12.30 PM 31.5 Cent.

Incoming tide, At 5.30 PM 30.5 Cent.

Low water at 3.10 PM

Collections of Liguus were made in same site as LM 14 & LM 22. Other specimens were taken in HAWK CHANNEL on the ocean side of KEY LARGO at a point 7.5 miles north of the road junction of Old Road and U.S.1. Directly exposed to sea except for off shore submerged reefs. Zone 1 is rock coral almost perpendicular for 18" to 30". Zones 2, 3 & 4 are heavily silted coral rock with sand pockets. ~~ZONES~~ Zones 2 & 3 extend from Z 1 for 50' to 100' to Zone 4. Zone 4 slopes gradually and at 150 yards out is 24" to 30" deep.

Collections include:

- A. Liguus; see LM 14 and 22.
- B. On beach and out 150 yards:

Zone 1:

Nerita, 3 species.

Isopods.

Zone 2:

Siphonaria sp

Thais floridana

Thais deltoidea

Cerithium floridanum ?

Cantharus tinctus ?

Zones 2 & 3:

Pedalion alata.

Mytilus sp.

Crab ; blue claws.

Zone 4:

Corals.

Tethys; black.

Gorgonids.

Fasciolaria tulipa.

Cerithium in sea weed.

Fish in sea weed

Spider crab.

Sea Anemone on shell.

Tegula fasciata - in sea weed.

EXPENSES:

Collecting	5.5 hrs.
Travel	<u>1.0 "</u>
Field	6.5 "
Specimens	<u>2.0 "</u>
Total time	8.5 "

EXPENSES : Total time 8.5 hrs.

Use of private car, \$1.00

Collection L M 26 - 49 HAWK CHANNEL, NORTH KEY LARGO.

May 30th, 1949; from 2.10 PM to 6.05 PM.

Temperature of surface water at 2.30 PM at 2' deep 29.5 Cent.
At 0.5' " 30.5 "

Low water at 4.00 PM

On KEY LARGO 13.3 miles north of ROCK HARBOR LODGE, 5.2 miles NE of where Old Road joins present US1. Enter woods on dirt lane where dish pan hangs, to, where house is completely collapsed by hurricane. Coral bank and bottom with usual patches of silt and sand; with much sea weed and other life. On ocean side, direct exposure to seas except for submerged offshore reefs.

Collections include:

Sea Biscuit.
Cup Sponge.
Coolie ~~Ø~~ Hat Sponge.
Club Sponge, yellow green.
Sponge, green mat.
Sponge, black cabbage-head.
Coral - head type.
Coral - fluted saucer shape.
Brittle stars from a sponge.
Polinices egg cases.
Polinices canrena? In sand.
Arca sp. On sponge.
Pyrene sp. On sponge.
Octopus on sponge.
Sea urchin, fine black & white long spines.
Cray fish - in rock pockets in 1' water at Low Tide. Z4.
Worms, many in and on sponges.
Sea Urchins, large with long spines, plentiful but not taken. Unable to preserve.
Tegula fasciata on sponges.

EXPENSES:

Collecting time	4.0 hrs.
Travel time	1.0 "
Total field time	5.0 "
Specimen care	2.5 "
Total time	7.5 "

Use of car \$1.00

Collection L M 27 - 49. HAWK CHANNEL, NORTH KEY ~~L~~ARGO

May 31st, 1949; from 2.30 PM to 6.00 PM.

Continued collections at same place as May 30th (LM 26) but more extensively. In HAWK CHANNEL toward the north east end of KEY LARGO.

Collections include:

- A. In water 6" deep at low tide, in & on sponges.
Vermicularia spirata PHILIPPI
Worms
Arca sp. Attached
Modulus modulus.
Crab, covered, red.
Spider crabs on sponge.
Diadora listeri?
Hipponix antiquata~~s~~ LINNE' (Or Capulus ungaricus LINNE')
Chiton, long, naked.
Brittle stars.
Fasciolaria gigantea - juvenile, 1.5" long.
Sea star.
- B. In rock cavities or on rocks:
Sea urchins, long spired, purple.
Sea urchins, " ", alternating black & white.
Cray Fish.
Callinectes.
Natica canrana, shell only.
Natica egg cases, often 3 or more superimposed.
Fasciolaria tulipa.
Pinctada radiata LAMARCK. On rocks in Zones 3 & 4.
- C. At 2' deep or better.
Sea Biscuit.
Gorgonid, a new type (For this collection)

EXPENSES:

Collecting time	3.5 hrs.
Travel time	1.0 "
Field time	4.5 "
Specimen care	2.0 "
Total time	6.5 "
Use of car	\$1.00
Isopropyl	1.20 Local purchase.
Cash outlay	2.20

June 3rd, 1949; from 4.00 PM to 6.05 PM.

Collected at same site in HAWK CHANNEL off the coast side of the north end of KEY LARGO, as LM 26 and LM 27. But as tide was at high to mid tide, collected today only from Zone 1 to upper Zone 3. Coral rocks and loose rocks; and sand pockets.

Temperature at 5.00 PM of surface water, 31.2 Cent.

~~XXXXXXXXXX~~

Collections include:

Pedalion alata in Zones 2 & 3.
P.alta juvenile.
Mytilus sp. on bottoms of rocks. Z 2 & 3.
Nerita peleronta LINNE'
N. tessellata GMELIN
N. versicolor GMELIN
Neritina pupa LINNE'
Crab, large blue.
Crab, heavy clawed, 2" - 3".
Nudibranch, small green, under rock, Z 3.
Hermit crab in Fasciolaria shell.

At 0.25 miles from beach or any other water, found a hermit crab in a Liguus shell. He dropped the shell and tried to escape.

EXPENSES:

Collecting time	2.0 hrs.	
Travel time	1.0 "	
Field time	3.00 "	
Preparation of specimens	0.5 "	
Total time	3.5 "	
Use of private car	\$1.00	
10 gals Isopropyl	12.50	Purchased in Miami, bill
Cash outlay	13.50	submitted.

Collection L M 29 - 49. HAWK CHANNEL, LOWER MATECUMBE KEY.

June 4th, 1949; from 6.00 AM to 10.15 AM.

Low water at 8.00 AM approx.

Temperature of surface water 18" deep, at 8.00 AM, 28.0 Cent.

At 11.00 AM, 30.0 "

This collection was made just NE of the site covered in LM 24. In HAWK CHANNEL off the Atlantic side of Lower Matecumbe Key, at a point 3.3 miles SW of INDIAN KEY DRAW BRIDGE, or 24 miles SW of Rock Harbor Lodge.

Collections include:

Crab, large, heavy claws. In 2' water in scattered sea grass.

Spider crabs.

Commensal crab in Ascidea.

Other crabs.

Gorgonid in bearing.

Cerithium sp.

Tagelus fasciata.

Brittle stars.

Needle Fish, 6" long.

Fish, stubby orange. 1.25 " long.

Other fish.

Shrimp.

Green shrimp embedded in sponge cavity.

Crayfish around cabbage head sponges.

Octopus. Body brown, became milky, eyes became iridescent.

No ink discharged. Walked.

Sea urchin, small, long thin black & white spines.

Astraea americana.

EXPENSES:

Collecting time	4.0 hrs.
Travel time	1.0 "
Field time	5.0 "
Preparation specimens	2.0 "
Total time	7.0 "

Use of car, \$1.00

Collection L M 30 - 49 HAWK CHANNEL, GRASSY KEY.

June 6th, 1949; from 9.05 AM to 1.00 PM.

Low water at approx. 10.20 AM

Temperature of surface water 2' deep at 10.00 AM 29.5 C.
At 12.00 M 30.5 C.
At 1.00 PM 31.5 C.

Collected off same beach as LM 19 on May 24th, but got further out toward the channel. This is in HAWK CHANNEL off the Atlantiv side of GRASSY KEY, $\frac{1}{4}$ mile S of Seaside Cabins and store.

Collections include:

Sponge, red, club.

Gorgonid with encrustation.

Crabs, various species.

Commensal crabs with cover of black Ascidea or sponge, not imbedded in a mass but crawling about on bottom.

Toad Fish.

Fish, other small.

Shrimp.

Crayfish - small.

Hermit crabs in shells of *Natica carrena*

Astraea americana, &c.

Pedalian alata in Z 3 on dead limb.

Tegula fasciata.

Diadora listeri.

Spidery crab, on black ascidea on coral rock.

Nudibranch, brown.

Ancistrosyrinx elegans DALL ?

Murex sp.

Rock Oyster

Pelecypod, brown.

EXPENSES:

Collecting time, 4.0 hrs; travel time, 2.0 hrs; total field, 6.0 hrs.

Preparation of specimens

2.0 "

Total time

8.0 "

Use of private car \$1.00

Toll at Bridge 1.00

Cash outlay 2.00

Collection L M 31 - 49. FLORIDA BAY, CRAWL KEY.

June 6th, 1949 ; from 1.30 PM to 2.30 PM.

On CRAWL KEY, in the FLORIDA BAY, 6.3 miles NE of MARATHON Post Office. At a point near the highway (U.S.1) where coral rock has been removed, leaving an abrupt drop from Zone 1 to Zone 3 & 4, of from 2' to 3'. Zone 3 and 4 are gently sloping sand. The coral rock wall of Zone 2 is much honeycombed.

Collections include:

Above Zone 1 and removed some distance from the shore:
Truncatella sp.

Zone 1:

Tectarius muricatus LINNE'. High in the zone.
Littorina ziczac. Just below the above in the zone.
Nerita, all species, with and below the above.

This was a collection at high tide of the terrestrial species known to be profuse here. Another species found here last year is now absent - one of the Astraea.

EXPENSES:

Collecting time	1.0 hr.
Travel	<u>1.0 hr.</u>
Total field	2.0 "

Other charges covered by LM 30.

Collection L M 32 - 49 Hawk Channel, KEY LARGO NORTH.

June 7th, 1949; from 10.08 AM to 2.02 PM.

Low water at approx. 11.15 AM.

Temperature of surface water 6" deep at 10.10 AM 32.0 C.

Same place at 2.00 PM 36.5 C.

Collected off the same ocean beach in HAWK CHANNEL off the north end of KEY LARGO as in collections LM 26-27-28, but in a belt further out. Out from shore at least 300 yards, where at low water the depth is about waist deep. Continues to get deeper very gradually.

At 100 yards the typical growth is a small green sponge averaging 4" diameter and 6" high.

At 200 yards Gorgonia begins to appear but the type organism is the big Cabbage-head Sponge.

At 250 yards Cup sponges and Gorgonia are typical.

The first Gorgonia to appear is short, purple, angular.

The second Gorgonia is cream colored, also angular.

The third Gorgonia is long, many-branched, and purple.

Collections include:

Red Sponge growing up from bottom on Gorgonias.

"Sea Grapes", green, adhering to above.

Red Shrimp in red Sponge.

Shrimps, not red.

Callinectes.

Crab, Mimulus-like.

Sponge, black club.

Cup Sponge, small. Average cup sponge here is 10" across.

Vermicularia spirata - in Green Sponge.

Pyrene sp - on Green and Red Sponges.

Arca reticulata GMELIN. On green Sponges.

Black Club Sponge, very oozy & slimy, from 3' of water.

Hipponix - on Sponge.

Star Fish - red Asterias?

Henrycia ?

Purple Sponge.

Octopus sp.

Murex sp.

EXPENSES:

Collecting time 4.0 hrs.

Travel time 1.0 "

Field time 5.0 "

Preparation of specimens 2.0 "

Total time 7.0 "

Use of private car \$1.00

Collection L M 33 - 49. FLORIDA BAY, MATECUMBE BIGHT.

June 8th, 1949; from 10.30 AM to 1.30 PM.

Low water at approx. 12.00 M.

Temperature of surface water at Noon, 30.0 Cent.

Collections in MATECUMBE BIGHT, FLORIDA BAY, on LOWER
MATECUMBE KEY at a point 2.2 miles south of INDIAN KEY
BRIDGE. The shore at this point is the usual rough coral
rock in Z 1; then a sloping coral rock shelf from 6' to
20' wide through Zones 2 & 3; then a drop of from 3' to 6'
where rock was taken for road construction years ago.

Collections include:

Diadora cayenensis - a red mantle.

Diadora listeri.

Fissurella rosea.

Cantharus tinctus.

Arca barbata.

Arca umbonata.

Comp. Ascidea.

Crab, Mimulus-like.

Crab, green, small.

Pelecypod, a small pink 3/4th inches long, swam like a

Pecten. Had long fringes on mantle. Thin shell.

Clam, like a grain of swollen wheat.

Mytilus sp.

Chiton, long, slender, cream colored, no hair.

Brittle stars, 2 sp.

Serpulorbis decussatus GMELIN.

Hydroid, on rock.

NOTE: Most of above were on or under loose rocks in Zone 3.

EXPENSES:

Collections,	3.0 hrs
Travel	2.0 "
Field time	5.0 "
On specimen preparation	1.5 "
Total Time	6.5 "

Use of car \$1.00

Collection L M 34 - 49. HAWK CHANNEL, LOWER MATECUMBE.

June 9th, 1949; from 11.05 AM to 3.30 PM.

Low water at approx. 1.00 PM.

Temperature os surface water 1.0' deep at 3.00 PM 32.2 C.

This collection made in HAWK CHANNEL off LOWER MATECUMBE KEY (INDIAN KEY ANCHORAGE) at a point directly across the key from collection LM 33. at a point 2.2 miles south of Indian Key Bridge on U.S.#1.

Inland from High water mark is a high ridge of sand (10'). In Zone 1 is a belt of sand, broken coral and shells. Then gently sloping barren and smooth coral rock for Zones 2 & 3. Zone 4 is coral rock with pockets of fine sand. At 100 yards out the water is 2' deep at Low water. Patches of Sea grass 6" to 8" tall are common, catching sand, and with much coral and sponge growth in it.

Collections include:

In water 6" deep or shallower:

Callinectes.

By sifting sand from pockets in 6" water at Low water.

Marginella apicina MENKE.

Mytilus exustus LINNE' This mussel rather green in color.

Polinices triseriata SAY.

P. lactea GOULDING.

Conus floridanum - with Hermit crab.

Fasciolaria gigantea - # juvenile specimen.

On and in old shells in sea weed patches:

Astraea americana.

Cerithium sp.

Crayfish.

Crabs, various.

Shrimp.

Worms.

At 2' deep near patches of sea weed, among Gorgonids,

Cabbage head sponges, &c; (at Low water)

Sea Biscuit.

EXPENSES:

Collection time	4.5 hrs.
Travel time	2.0 "
Field time	6.5 "
On specimens	2.0 "
Total time	8.5 "

Use of private car \$1.00.

Collection L M 35 - 49.

FLORIDA BAY, LONG KEY.

June 10th, 1949; from 10.00 AM to 1.00 PM.

Low water at approx. 3.00 PM, but rather low all day.

Temperature of surface water at 10.30 AM was 29.2 Cen. Cloudy.

In FLORIDA BAY off the NE end of LONG KEY, 0.4 miles SW of the GREYHOUND POST HOUSE on JEW FISH KEY. A typical bay beach with coral rock much honeycombed in Zones 1 & 2, and gently sloping sand and occasional loose rocks, all coral, in Zones 3 & 4 and beyond.

Collections were all made in Zone 4 and include:

Swimming:

Callinectes with a brown carapace.

Crayfish, flushed from beneath rock overhang.

Beneath loose rocks:

Arca barbata

Arca umbonata

Cantharus tinctus

Chiton - long, narrow, cream colored and naked. End plate green.

EXPENSES:

Time collecting	3.0 hrs.
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Travel time	1.0 "
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Field time	4.0 "
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Preparation of specimens	1.5 "
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Total time	5.5 "
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(One way only - See LM 36)

Use of private car	\$1.00
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Collection L M 36 - 49. HAWK CHANNEL, GRASSY KEY.

June 10th, 1949; from 1.30 PM to 4.30 PM.

Low water 1.45 PM approximately. Unusually low all day.

Temperature of surface water at 2.00 PM 32.0 Cent. Cloudy.

Collected in HAWK CHANNEL off the Atlantic shore of GRASSY KEY a quarter mile south of Seaside Cabins and store. The same area collected on May 24th, 49, in LM 19. But the low water permitted collecting further out from shore to the virtual edge of Hawk Channel.

Collections include:

Fasciolaria tulipa

Gigas strombus

Sea Star, unusually large. Pisaster?

Pelecypod - clam.

" "

" "

Polinices

Commensal crab with covering.

Brittle stars - from old Conch shell.

All above found in Zone 4, nearly exposed by the Minus Tide.

EXPENSES:

Collecting time	3.0 hrs.	
Travel time	<u>1.0 "</u>	Return only. See LM 35.
Field time	4.0 "	
Preparation of specimens	<u>2.00 "</u>	
Total time	6.0 "	

Toll at Bridge on US1. \$1.00

Use of private car - see LM 35.

Collections L M 37 - 49. HAWK CHANNEL, GRASSY KEY.

June 11th, 1949; from 12.00 M to 3.35 PM.

Low water at approx. 2.45 PM.

Temperature of surface water at Noon 31.0 C. Cloudy.

Collected in HAWK CHANNEL off the Atlantic coast of GRASSY KEY about a quarter mile from Beaside Cabins, in the same areas as covered by LM 19 and LM 36, but concentrated on sea weed covered flats exposed at this low water or covered not more than 6" deep. Much coral is found in the weed patches, and many old shells. The seaweed is the ubiquitous grass-like species, with blades $\frac{1}{2}$ inch wide and 6" to 10" tall.

Collections include:

Strombus gigas
Fasciolaria tulipa
Atrina rigida - half exposed out of sand in 6" water at L.W.
Lima scabra - shell only.
Pteria colymbus ROEDING. Attached by byssus to other shells among seaweeds in 4" water at L.W.
Polinices lactea with hermit crab.
Fish, one of pair commensal in live *Strombus gigas* shell mouth.
Astraea americana
Crepidula on *Atrina*.
Venus mercenaria LINNE' - shells only.
Macoma constricta - one valve. BRUD.
Lucina pennsylvanica LINNE
L. jamaicensis LAMARCK
Trachycardium
Lima sp.

EXPENSES:

Collecting	3.5 hrs.
Travel	2.0 "
Field time	5.5 "
Preparation specimens	2.0 "
Total time	7.5 "

Use private car	\$1.00
Toll on U.S.1	1.00
Cash outlay	2.00

Collection L M 38 - 49. FLORIDA BAY, LOWER MATECUMBE.

June 12th, 1949; from 12.30 PM to 4.35 PM.

Low ater at approximately 3.30 PM.

Temperature of surface water at 1.00 PM 29.5 C. Cloudy.
At 4.00 PM 30.0 C. "

Collected in MATECUMBE BIGHT, FLORIDA BAY, off LOWER MATE*
CUMBE KEY, 2.2 miles south of INDIAN KEY DRAWBRIDGE.
This is the same area covered by LM 33 on June 8th, 49,
but extends further north along the beach to the mangroves.
In this locality there are many coral boulders on the
bottom in Zone 4.

Collections include:

In Zone 1:

Fish found dying with others in a tide pool. Deep
water comes in practically to Zone 1, 6' or deeper,
and large fish are very active there.

In Zone 4, under or about coral rocks, loose on bottom.

Arca barbata

Arca umbonata

Cantharus tinctus

Diadóra listeri

Diadora sp.

Chiton - long cream-colored.

Chiton - *Mopalia*-like.

Fish, small, in rock crevices.

Leech? Green, attached by one sucker to rock, weaving
to and fro, sucker also on outer end. Green, speckled.

Fish, small, in algae.

Brittle stars on bottoms of rocks.

Gastropods in clusters on rock bottoms; may be juveniles.

Sipunculid.

Spider crab - large specimen.

EXPENSES:

Collecting time	4.0 hrs.
Travel	2.0 "
Field time	6.0 "
Preparation of specimens	2.5 "
Total Time	8.5 "
Use of private car	\$1.00

June 14th, 1949; from 8.00 AM to 12.00 M.

High water 2.00 PM; Low water 11.00 PM.

On MARCO ISLAND near the channel south of the pass BIG MARCO PASS, on the sand flats between the islet described in LM 6, 7 & 8 of May 15th & 16th, 1949, and the main island. No surf, water nearly currentless at and near low water.

Collections include:

Busycon perversum - from 2" to 12" long, present by hundreds on silt-covered sandy bottom in a back-water of the bayou back of the islet and well protected from any sea; in water 18" to 30" deep at High Tide, nearly or quite bare at Low water.

Fasciolaria tulipa - only one specimen among the above.

Busycon canaliculatum - one specimen only among all above.

Compound Ascidea.

Brittle star on above.

Crab in Ascidea.

Crab, small, flat claws, under rotting sponges on beach.

Callinectes.

Tethys sp. Small specimen. Partly buried in sand.

Shell covered with yellow meat and fuzz; from a large *Tethys*?

Vasum muricatum.

Fish.

Crepidula on an old Conch shell.

Scapidula plana with above.

EMPTY SHELLS taken on Ocean beach (Gulf of Mexico)

Ficus

Tellina

Busycon canaliculatum

Polinices

Arca - 2 sp.

Donax

Strombus alatus ?

Mytilus sp.

EXPENSES:

Collecting, 4.0 hrs; travel, 1.5 hrs; total field 5.5 hrs.

Preparation of specimens

Total ~~XXXX~~ time

2.0 "

7.5 "

Use of private car,, \$1.00

Collection L M 40 - 49

CALCOOSAHATCHEE RIVER

June 14th, 1949; from 2.30 PM to 3.00 PM.

Collected on bridge abutment at FORT MYERS, in the
CALDOSAHATCHEE RIVER; the abutment being of "set"
cement bags.

Collected:

Neritina reclinata SAY. Abundant here.

EXPENSES:

Total time 0.5 hrs.

No other charge.

Collection L M 41 - 49. SANTA ROSA SOUND, CAMP NAVARRE.

June 17th, 1949; from 5.35 AM to 7.40 AM.

Temperature of surface water at 7.30 AM, 29.2 Cent.

Collected in the vicinity of the fishing pier at CAMP NAVARRE, in SANTA ROSA SOUND. Protected inner shore. In this sandy region, where most of the beaches are clean white coral sand, there are occasional strata of near-sandstone, of peat and sand compressed firmly but that still can be crumbled in the hand. This brown "sandstone" extends from above Zone 1 into Zone 4. There no rocks and no growing coral.

Collections include:

From the above-described "sandstone":

Mytilus exustus LINNE'

Isopods

Crabs

From the surrounding shallow water:

Callinectes - free swimming.

Hermit crabs in dead shells of

Polinices

Melangena corona.

Oysters on the above shells and on the piles of the pier.

EXPENSES:

Collecting	2.0 hrs
Care of specimens	0.5 "
Total time	2.5 "

No other charges.

CHOCTAWHATCHEE BAY ENTRANCE.

Surface water temperature at 6.00 AM	29.0 Cent.
At 8.00 AM	29.2 Cent.

Collected:

Crabs, small; Callinectes?

Flounder, small.

Denax variabilis.

In the Bay:

Mytilus sp.

Macoma sp.

Hermit Crabs in:

Polinices

Melangena corona

Thais floridana

Strombus pugilis

Cancellaria reticulata

Phalium

Barnacles on above dead shells.

Ostrea	"	"	"	"
--------	---	---	---	---

Crepidula plana with above.

Fish taken in inlet near bridge:

Catfish *

Sgt Major *

Sea robin *

* Local names.

Collecting time	3.0 Hrs
Travel time	<u>1.5 "</u>
Field time	4.5 "
Specimen care	<u>2.0 "</u>
Total time	6.5 "

Use of private car	\$1.00
Isopropyl, 4 pts	<u>1.00</u>
Cash outlay	2.00

Collection L M 43 - 49.

BOILING CREEK, FLORIDA

June 18th, 1949; at 5.05 PM.

Taken in BOILING CREEK, a branch of YELLOW RIVER, 15.0 miles
north of CAMP NAVARRE, FLORIDA.

Taken by net from skiff, swimming across the creek with
its nose breaking water, wriggling like a snake.

Collected:

"Lamprey Eel".

Total charge, preparation of specimen, 0.5 hrs.

Collection IM 44-50

MARCO ISLAND, FLORIDA.

14 Sept. 1950.

On the sand beach on the west coast of MARCO ISLAND, Florida, open to the Gulf of Mexico; taken at and above normal high tide mark in the litter washed up a week previous by a local hurricane.

Collected dead shells of the following:

Atrina rigida
Atrina serrata
Pecten irradians
Pecten gibbus
Ficus papyraria
Strombus pugilis
and others.

Collector Lee O. Miles

Collection IM 45 - 50. MARCO ISLAND, Florida.

14 Sept. 1950.

On the sand flats at the inlet to lagoon and tidal stream at the north end of Marco Beach; taken at low tide between 4.30 PM and 7.00 PM. All on or near the surface adjacent to the channel on clean sand. Tidal flow in and out of this inlet is strong.

Collections include:

Pecten sp.
Corona
Busycon
Murex pomum?
Arca
Bryozoa

and others.

Sea Squirts
Barnacles
Crabs
Sponge on Pecten
Grey Ascidea?
Sea Cucumbers

Collector, Lee O. Miles

Collection LM - 46 - 50 MARCO ISLAND,
Florida.

15th Sept. 50.

Collected at MARCO ISLAND, Florida, on sandy beach open to the Gulf of Mexico, at and near normal high water mark in the wrack of last weeks hurricane.

Collected were empty shells of the following:

Olivella	Calliostoma jujubinum
Oliva sayana	Spisula solidissima
Fasciolaria gigantea	Anatina canaliculatum
Terebra	et al.
Bulla occidentalis	
Natica canrena	

Collector Lee O.Miles

Collection LM 47 - 50 MARCO ISLAND,
Florida

15th Sept. 50.

Collected at MARCO ISLAND, Florida, at low tide between 9.00 AM and 11.00 AM; on sand flats at the Inlet to the Lagoon at the north end of the above open beach, and in the protected Lagoon between the islet and the main shore of Marco. This protected locale has a muddy sand bottom, in places much silted, and with little or no obvious current. Specimens from this lagoon are marked *.

Collected :

Cancellaria	Conus floridanus
Strombus pugilis*	Strombus pugilis alatus*
Busycon perversum*	Busycon canaliculatus *
Cerithium minima*	Crepidula fornicatus*
Macrocallista nimbosa <i>Solander</i>	Chione cancellata*
Laevicardium serratum	Pecten gibbus*
Dinocardium robustum*	Trachycardium muricatum
Trachycardium isocardium	Chitons
Modulus modulus floridana	

Collector Lee O.Mile s

Collection LM 48 - 50

MARCO ISLAND,
Florida.

16 Sept. 50

Collected along the west or open Gulf coast of MARCO ISLAND above mid-tide in the wrack left by last weeks hurricane; south from the end of Florida Highway # 92. Open exposed sand beach, about 100 feet from high tide mark to low tide mark, horizontally.

Collections include:

Laevicardium	Fasciolaria tulipa
Calliostoma	Chama macerophylla
Fasciolaria gigantea	Pectens, several sp.
Conus	Trachycardium muricatum
Lima scabra	Anomia sp.
Macrocallista <i>nimbosa</i> - <i>Solana</i>	Bulla occidentalis
Spirula	Rock Oyster
Pteria colymbus	Arca sp.
Cancellaria	Oliva sayana
Ficus papyratia	Arca occidentalis
Murex sp.	Crepidula fornicata
Strombus alatus	Atrina rigida
Atrina serrata	and others.

Collector, Lee O. Miles

Collection LM 49 - 50

MARCO ISLAND,
Florida.

16 Sept. 50.

Lagoon north of the Inlet at the North end of MARCO BEACH; same area collected in part in LM 47-50. Bottom is muddy sand, well silted especially long the east shore. Little current; the water is more than tepid.

Collections include:

Nudibranchs, large, brown.	Sea Squirts
Strombus pugilis	Fasciolaria gigantea.
Sinum perspectivum	Busycon perversum
Fasciolaria tulipa	Shrimp
Uca pugilator? <i>Uca</i>	Foliata (Crab)
Black-claw crab	Hairy crab
Arca sp.	Trachycardium muricatum
Encope michelini	Atrina rigida
Dinocardium robustum	Tellina alternata

Collector, Lee O. Miles

Collection LM 50 - 50

MARCO ISLAND,
Florida.

17 Sept. 50.

Collected on the open Gulf beach, clean sand ; at the south end of the Island and along the north shore of SOUTH INLET. This beach becomes wider as it goes south, becoming 200 feet wide facing the Inlet. Here it grows mangrove and some shrubbery, and peat and clay are exposed here and there.

Collections include:

Littorina sp. On trees.

Olivella sp.

Murex pomum?

Alphabet shell

Cancellaria

Crepidula aculeata (File)

Mytilus, plain.

Pecten sp.

Chama macerophylla (Treasure)

Busycon cancellata

Clam, small, white, sculptured.

Mostly empty shells.

Oliva sayana

Murex sp. Thin, purplish.

Conus sp.

Fasciolaria gigantea

Arca occidentalis (Turkey wing.)

Ficus papyrata

Fasciolaria tulipa

Natica canrena?

Busycon perversum

Terebra sp.

Collector, Lee O.Miles.

Collection LM 51 - 50 MARCO ISLAND, Florida.

17 Sept. 50.

At low tide in the Lagoon at the North Inlet, same area as covered in LM 49 and previously. This lagoon is known locally as CLAM FLAT.

Collections include:

Sponge, yellow brain-like.

" Dark purple finger.

" Orange finger, long.

" Pale purple finger, rough.

" Red coral-like.

Limulus polyphemus (H.S.Crab)

Star fish

Small red shrimp, in coral &c.

Gray Pistol Shrimp.

Murex, pomum

Mellita quinquiesperforata (Round 5 slit sand dollar.)

Strombus pugilis et al.

Macrocallista

Dinocardium robustum

Trachycardium muricatum.

Fasciolaria tulipa

Foliata (Crab)

Crab, black-clawed.

Pagurus

Red Shrimp, larger.

Collector,

Lee O.Miles

Collection LM 52 - 50

KEY LARGO, Florida.

19 Sept. 50.

South of Gordon's Landing at ROCK HARBOR on Key Largo, about 200 yards. Near the Stilt House. Coral rock, varying from four feet above low tide, bare and honey-combed, to low as low tide level, with mangroves. Shallow off shore, with little coral sand on the coral bottom, at low tide not more than hip deep at 100 or more yards from shore. An island off shore protects somewhat from heavy surf. This water is HAWK CHANNEL.

Collections include:

Vasum muricatum Z 2 Vase shell.
Pedalion alata Z 1 & 2. Winged tree oyster
Fasciolaria distans. Z 3.
Sponges Z 4
~~SPONGES~~ Vermicularia spirata; in sponges.
Cucumaria sp. ; on sponges.
Hydroids
Calinectes sapidus - blue crab. Swimming, Z 4.
Crabs, leaf-like; on sponges.
Nerita versicolor - Baby tooth nerita; Zone 1
N. tessellata - Black & white nerita; Z 1
Coral, ball shape. Z. 4
Clam shells, empty; pink.
Mytilus; with rock oyster, Z 1 & 2
Sea Anemone, Z 4
Sea Urchins, blue with short spines; Z 4, in coral pockets.
Limulus polyphemus - Horseshoe crab; in tide pool, Z 2.

Not a nearly complete representation from this area, due to poor collecting conditions - not a very low tide, and a choppy sea interfering with visibility.

Collector, Lee O. Miles

Collection LM 53 - 50.

KEY LARGO, Florida.

20 Sept. 50.

HAWK CHANNEL, North KEY LARGO; 13.5 miles north of Rock Harbor Lodge on U.S. Highway 1 (old and new), turning east on a dirt roadway at an old dishpan marker. Collections were made at a normal low tide on the ocean shore, coral to 4 feet high (above low tide) to as little as -0.5 feet above, this type of shore being silted and grown to mangroves; and other collections (B) were made from trees along the Highway.

Collections include:

From the shore outward to 2 feet below low tide:

Panulirus argus - Florida crayfish or spiny lobster; Z 4

Cerithidium minima - littoral & Z 1.

Urosalpinx - Oyster drill; Z 1 & 2.

Callinectes sapida - blue or swimming crab; Z 3 & 4

Hydroids

Vermicularia spirata, in sponges, Z 3 & 4.

Compound ascidea.

Coral, ball type.

Coral, finger type.

Pagurus sp ?

Chitons. Zones 3, 2 & lower 1.

Siphonaria alternata; Z. 2, 3 & 4.

From trees along old Hy 1:

Ligula sp. Tree snails, no operculum.

Mottled tree snail, smaller than above.

Truncatella ? On cherry boles.

Only a partial representation of the commoner organisms present; tide not very low, surface choppy.

Collector

Lee O. Miles

Collection IM 54 & 50.

KEY LARGO, Florida.

21 Sept. 50.

On BUTTONWOOD SOUND, on the west shore of Key Largo; north of Rock Harbor Lodge on U.S. 1 to the German Memorial Church, turning west here on an overgrown dirt roadway 200 yards to the shore. The shore here is rough coral, reaching up to 3 feet above low tide. Best collecting is on loose coral rocks of old boat landings. This cove is known as Sunset Cove and is well protected by Pelican and other keys.

Collections include:

Murex florifer or a similar species.
Pinctada sp., especially juveniles.
Rice clams; small brown grain like shells on rock bottoms.
Mytilus sp.
Fasciolaria distans; a large dead specimen.
Keyhole limpets. On rocks and submerged timbers.
Star fish.
Fish, small, red.
Fish, speckled grey & white.
Sea anemone.
Pyrene mercatoria.
Modulus modulus - button snail.
Fasciolaria distans, juvenile.
Pistol Shrimp.
Small crabs.
Comp. Ascidaea, oranges, knobby.
Comp. Ascidaea, dark green, slimy.
Nudibranch? small.
Scale worms.

See also collections IM 11 - 49, et al.

Collector

Lee O. Miles.

Collection LM 55 - 50

Lower Matecumbe
~~KEY LARGO~~, Florida.

22 Sept. 50

See also "A" of LM 24 - 49.

On LOWER MATECUMBE just south and east of Hy 1 Causeway at MATECUMBE HARBOR, on the shore of HAWK CHANNEL, open to the sea except for off-shore reefs some five or six miles toward the Gulf Stream. Collecting was done on coral boulders of a small jetty and on the thinly sanded bottom where shallow tide pools at low water yielded well.

Collections included:

Melangena corona in the shallow pools and thin sand.
Purples - Zone 1 and on jetty.
Astraea longispina shell with Hermit Crab.
Astraea americana shell with hermit crab.
Nerita peleronta Zone 1.
Nerita tessellata " 1.
Nerita versicolor " 1.
Purporita pupa " 1.
Natica canrena shell with Hermit Crab.
Littorines, including Littorina ziczac. Z. 1.
Tectarius muricatus.
Modulus modulus floridanus with Hermit Crab.
Pagurus sp. in large shell of Fasciolaria.
Cerithium sp.
Pyrene sp.
Crab, foliated type.
Crab, heavy black claws.
Nudibranch, green. On rocks of jetty at low water.
Bryozoa?
Sea Cucumber, black.
Sea cucumber, white speckled.

See also Collection LM 24 - 49.

Collector,

Lee O. Miles

Collection LM 56 - 50

GRASSY KEY, Florida.

22nd Sept. 50.

See also Collections LM 19, 30, 36, 37, 56 and 62.

ON GRASSY KEY, in the shallow waters between HAWK CHANNEL and the key, at a point just off Hy 1 to the east and south about 0.3 miles south of "SEASIDE CABINS" and store. The shore here slopes abruptly from High Tide mark to normal LOW water mark, a drop of about 4 feet in a distance of 10 to 20 feet; from there the shore slopes abruptly to bottom of coral sand with much broken shell, this bottom almost level, the water at normal low tide being only two feet deep at some 300 yards from shore. Beach open to the sea, except for the submerged reefs of the Turtle Shoals and others out 5 to 7 miles.

Collections include:

Busycon perversum; large live specimens at 1 foot depth.
Strombus gigas. Same niche.
Natica canrena shell and Hermit Crab.
Polinices sp. shell and Hermit.
Banksia in sunken timber.
Red Sponge, finely divided.
Crabs, various species.
Fasciolaria distans.
Pagurus sp.
Coral, white with pink dots, on twig.
Sea Urchins, white to pink.
Arca sp.
Mytilus exustus.
Codakia orbicularis shell.
Loripinus chrysostoma.
Tonna perdix shell with hermit crab.

See also other collections listed above for other dwellers in this area.

Collector

Lee O. Miles

Collection LM 57 - 50 LOWER MATECUMBE,
Florida Keys.

23rd Sept. 50.

See also Collections LM 34, 58 and in part, LM 29.

On LOWER MATECUMBE KEY in the shallow waters between Hawk Channel and the key, open to the sea except for the submerged reef some 6 miles offshore; at a point on Hy 1 about 2.5 miles southwest of Indian Key Drawbridge. See LM 34 - 49 for description of varied littoral and bottom conditions.

Collections include:

Sponge, purple.

" red

" brown finger or vine like, grows along bottom.

" green fan-like, oscula on edge.

" cup type, like "Venus Girdle"

" dark green ball.

Encrustations on Gorgonids

Gorgonid, 4 angled.

Encrustations, hard, on twigs.

Pyrene sp. on and at base of sponges.

Shrimp, with above.

Small clams with above.

Worms in green sponges.

Strombus gigas, half grown specimens.

Coral, knobby, yellow.

Coral, finger-like, yellow.

Panuliris argus, small crayfish, under spines of

Sea urchin, long spined.

Fish, with sponges, commensal.

Goose barnacles on bamboo afloat.

Crab, like Mimulus foliata.

Crab embedded commensally in Comp. Ascidaea.

Crab with heavy black claws

Callinectes sapida - blue swimming crab

Crab, speckled.

For other resident species, see other collections above.

Collector,

Lee O. Miles

Collection LM 58 - 50 LOWER MATECUMBE KEY,
Florida.

24th Sept. 50.

See also collections LM 57 and 34.

Collections were made at the same location as covered in the collections listed above, except that with a glass-bottomed box for better vision, the water was worked to a depth of three feet at a distance up to nearly 150 yards from shore, at low water. For a description of the varied bottom and littoral conditions, see LM 34.

Collections include:

- Crab from cloacal cavity of sponge.
- Panulira argus, crayfish, from around sponges.
- Same from shelter of long-spined sea urchins.
- Mytilus exustus?, yellow-green, in sand in 2' of water.
- Astraea americana, on sponges and gorgonids.
- Astraea longispina, with above.
- Pelycopod, small.
- Polinices lactea.
- Natica canrena shell.
- Gorgonid, pinnately branched.
- Corals.
- Sea Biscuits. Buried in shallow sand, water 2-3 feet deep.
- Strombus gigas, half grown. Water 1 foot or more deep.
- Brittle stars on sponges.

On and around creeping club sponges :

- Long-spined Sea Urchins,
- Sea Cucumbers,
- Crayfish, young,
- Crabs of various species.

On and around large Kettle-drum type sponges,

- Sea cucumbers,
- Long-spined Sea Urchins,
- Crayfish, half-grown,
- Astraea americana, A. longispina,
- Miscellaneous crabs.

For other resident species, see other collections listed above.

Collector

Lee O. Miles

Collection LM 59 - 50 KEY LARGO, Florida

27th Sept. 50.

See also Collections LM 10, 17 and 61.

In FLORIDA BAY, but protected from waves from that open water by the SWASH KEYS, PIGEON, BUTTERNUT and other key s. At a point southwest of ROCK HARBOR LODGE 2.2 miles along Over-sea Highway (US 1) at a point marked by a grove of Coconut Palms at the water's edge, which here is about 75 feet from the highway. A well-protected beach with no surf. Splash zone less than 1 foot above high-water. Zones 2 & 3 are coral rock much honey-combed in spots, with shallow coral sand and silt pockets. Normal low water mark is 75 to 100 feet out from highwater mark with a tide range often but 18 inches, seldom over 3 feet.

Collections include: (Figures at right indicate depth of water in which found, at normal low water.)

Knobby coral	4' plus.
Purple speckled organism on sea weed	3'
Cream colored " " " "	2'
Nudibranch	3'
Sea Anemone	1'-3'
Pyrene mercatoria & P. rusticoides	1'-3'
Marginella apicina	1'-3'
Fasciolaria tulipa	1'-4'
Bulla occidentalis	2'
Busycon canaliculata - small specimen	2'
Cerithium - several species	0'-3'
Modulus modulus floriana	1'-4'
Crepidula plana	3'
Diadora alternata	2'
Chione cancellata	1'-4'
Styela-like growth on Algae	3'
Lemon-like balls on rock bottoms	2'
Limulus polyphemus	0' -4'
Arca sp. - Almost embedded in bottoms of rocks.	1'-3'
Purple sponges	2'-3'
Fish, off sponge.	2'
Crab, mimulus-like, off sponges.	2'
Sponges, Kettle-drum like, optimum depth	2'

For other residents, see collections above-listed.

Collector

Lee O. Miles

Collection LM 60 - 50 LONG KEY, Florida.

28th September 50.

On LONG KEY at a point about 2,000 yards easterly from the beginning of Long Key Viaduct on Hy 1; and about the same distance westerly from Jack Steel's Long Key Restaurant and Layton's Cabins, as follows:

A. On the ocean (S) side, open and exposed except for Tennessee Reef and submerged reefs about 6 miles off-shore; with a soft bottom of shifting coral sand and silt. The waves are cutting into the bank and have here uprooted some trees. Taken by wading.

B. On the ocean side of the same area as above, but in the wrack at high-tide and just above.

C. Across the Key from the above, in FLORIDA BAY, exposed to this extensive water. On rocks at or near high water.

Collections include:

- A. Styela-like organism.
Worms in above.
Sponge, scarlet, finger-like.
Sponge, maroon, finger-like.
Thais deltoidea - "purple". Zone 2.
- B. Pelycopoda, several.
Hermit crabs
Sponge skeletons ("Venus girdle")
Sea urchin testes - Of Eucidaris tribuloides?
Sea Urchin tests - Strongylocentrus drobachiensis,
various color effects.
- C. Nerita versicolor With red, except white teeth.
Nerita tessellata With black and white only.
Nerite peleronta Bleeding tooth. Becoming scarce.
Fasciolaria tulipa On sand bottom.
Gastropods, several species, on rocks.
Tectarius muricatus.

Not a prolific collecting ground.

Collector

Lee O. Miles

Collection LM 61 - 50

KEY LARGO, Florida.

2nd October 50.

See also collections LM 10, 17 and 59, at this area.
Especially LM 59 - 50 for shore and bottom conditions.
Collections on this date Oct. 2, were extended by wading
at low water out to over 5 foot depth, using a glass
bottomed box. Results were disappointing.

Collections include:

Fasciolaria tulipa, juvenile to medium size, taken
mostly near shore.
Busycon canaliculatum.
Chione cancellata
Anomalocardia cuneimeris (Mostly empty pelycopod
shells at 4' to 6 feet,)
Conus floridanus, young.
Marginella apicina
Sea Anemone

Collector

Lee O. Miles

Collection LM 62 - 50

GRASSY KEY, Florida.

5th October 50.

On GRASSY KEY, extending collections LM 19, 30, 36, 37 and
56 to the westward, but mostly only above the mid-tide
mark, and mostly of wash shells and tests.

Collections include:

Sea Urchin tests of *Stron. drob.*
" " " " *Eucidaris tribuloides*?
Hermit crabs
Natica canrena
Sponge skeletons
Arca sp. Turkey Wing.

Collector

Lee O. Miles

Collection LM 63 - 50

CRAWL KEY, Florida.

5th October 50.

See also LM 31 - 49.

On CRAWL KEY in Florida Bay north of Oversea Highway at a point 6.3 miles NE of MARATHON P.O.; close to the highway where coral rock has been removed, resulting in an abrupt drop from Zone 1 to Zones 3 and 4 of from 2' to 3'. Zone 1 is splash area; Zone 2 is an abrupt wall of coral much honeycombed; Zones 3 and 4 are gently sloping of sand and coral silt. All this in an indentation of the coast much protected from any sea off Florida Bay.

Collections include:

Fasciolaria tulipa

Littorina ziczac

Tectarius muricatus

Echinella nodulosa

Cerithium minima

Neritina virginea

Urosalpinx cinareus

Sea Anemone

Chitons

Diadora minuta and *D. Alternata*

Acmaea punctulata

Siphonaria naufragum

Astraea americana

Arca 2 sp.

Hermit crabs.

Nassarius vibex

Land Snails:

Truncatella *Cerion incana* *Buccina*

Sp. An ovate spiral shape. *Bulinus dealbatus*

Engelmannia rosea - *Ler*

Say

Collector

Lee 0.Miles

Collection LM 64 - 50 MARCO ISLAND,
Florida.

6th October 50.

For description of beach and bottom conditions, see Collections LM 45, 46, 47, 49, 51 and others therein referred to.

Collected on Marco Island from the end of the Stat Highway along the outer (Gulf of Mexico) beach to the Lagoon and to Big Marco Pass, the main northern inlet. Conditions vary from exposed outer coast to an almost stagnant lagoon, from pure sand to a heavily silted sandy mud.

Collections include:

Fasciolaria distans in sand on sand beach, Z 3.
Fasciolaria tulipa in the lagoon, Z 4.
Strombus pugilis in the lagoon in Z. 3 & 4.
Sinum perspectivum burrowing like *polinices* in the lagoon, Zone 3. (Ear Shell; mantle nearly hides shell.)
Encope michelina (arrow sand dollar) in the north lagoon inlet, partly covered by sand. Zone 4.
Star fish, red-brown, with above.
Brittle stars in Zone 4 on the outer beach in and on old shells, particularly in tide pools.
Conus sp. On the outer beach.
Murex pomum? On the outer beach and in the sand flats next to inlet between lagoon and N. Islet.
Murex sp. - flattish; outer beach.
Oliva sayana shell; outer beach.
Chione cancellata. Lagoon in Zone 4.
Atrina rigida nearly buried vertically in Lagoon especially in sandy areas, Zones 3 & 4.
Donax variabilis, wedgies, on bars of outer sandy beach in Zones 3 & 4.
Cerithium floridanum in lagoon, Zoa 4, where silted.
Nassarius vibex (and /or *hotessieri*) on outer beach especially on sand flats and shallow pools, Z 3 & 4 .
Limulus polyphemus rather ubiquitous except in surf, Zones 2, 3 & 4 where ever water stands. Grown ones stick to Zones 3 & 4 in lagoon, mostly.

Collector

Lee O. Miles

Collection LM 65 - 50 MARCO ISLAND,
Florida.

7th October 50.

See also LM 64 and other collections therein referred to.

On MARCO ISLAND at the northern extremity, on the islet adjacent there to BIG MARCO PASS, in the inlets and in the lagoon.

Collections include:

- A. From the outer beach, exposed but with tidal pools at low water.

Busycon perversum.
Limulus polyphemus inside the bars.
Melongena corona.
Strombus pugilis
Donax variabilis
Trachycardium muricatum.
Small chitons.
Nassarius vibex

- B. *Busycon perversum*
Limulus polyphemus
Strombus pugilis
Strombus alatus
Sinum perspectivum
Chione cancellata

B. Specimens were taken in the lagoon.

Collector

Lee O. Miles

Collection LM 66 - 50

MARCO ISLAND,
Florida.

8th October 50.

See also LM 64 and other collections therein referred to.

On the north end of MARCO ISLAND near Big Marco Pass,
as follows:

A. In the lagoon and on the thinly silted flats
therein, with sand and broken shells under the silt.
More intensively than in previous collections.

B. On the north tip of the islet between the lagoon
and the Gulf of Mexico, where Big Marco Pass enters the
Gulf; at #2 marker; of shells washed ashore. Clean
sandy beach, little protected.

Collections include:

A. From the silted lagoon:

Egg case.

Chitons, small.

Encope michellina (Sand \$)

Melongena corona

Busycon perversum - large specimens almost or
entirely buried on Pass side inlet (N) to
lagoon, in clean sand. Small and medium speci-
mens seen devouring cerithium and chione, by
smothering rather than drilling.

Busycon canaliculata

Strombus pugilis

Strombus alatus

Limulus polyphemus

Polinices sp.

Chione cancellata, perhaps also C. intapurplea.

Trachycardium muricatum

Sea Stars

Shrimp

Nassarius vibex

Cerithidium floridanum, in groups on silty sand, Z4.

Atrina ~~separata~~, in lagoon, z # & 4, extend to
surface or to 2" above; usually heavily barnacled.

B. Same as in LM 65, plus

Crepidula aculeata Gmelin, the thorny crepidula.

Collector

Lee O. Miles

Collection LM 67 - 50 MARCO ISLAND,
Florida.

9th October 1950

See also LM 64 and the other collections listed therein,
made on these same areas; and particularly LM 66.

Collections made in the identical areas covered yesterday
as shown in LM 66, as follows:

- A. In the silted shallow lagoon and on the sandy
shores of the same, at normal low water;
- B. On the clean exposed sandy beach of the north
end of the islet on the shore of BIG MARCO PASS.

Collections include:

- A. From the lagoon:
 - Crab, heavy-clawed.
 - Limulus polyphemus*, a mated pair.
 - Busycon perversum*, buried to nose along lagoon bank.
 - B. canaliculatum*, same as above.
 - Sand Dollar, round, off same bar as got Encope Mi ch.
 - Fasciolaria gigantea*, young, red.
 - Fasciolaria distans*, most numerous of genera here.
 - Macrocallista nimbosa* in sand, 4"-6" deep.
 - Trachycardium muricatum*.
 - Murex pomum*?
 - Atrina rigida*
 - Strombus pugilis*; predominate for genera here.
 - Strombus alatus*, occasional.
 - Clams, bent nose, 1 inch average length.
 - Chione cancellata*.
 - Sinum perspectivum* SAY. Ear shells; buried like
Polinices.
- B. At marker # 2, at north end of islet, shore of
Big Marco Pass.
 - Empty shells same as in previous collections here.

Collector

Lee O. Miles

Collection LM 68 - 50

MARCO ISLAND,
Florida.

10th October 1950.

Collected as follows:

- A. At low water on the shore of the lagoon at the east mainland end of the bridge on Florida Highway #92 in shallow water brown as swamp water but clear, on a sandy bottom thinly silted. Shore of sand and clay, overgrown above highwater, some mangroves and shrubbery at water's edge or in it.
- B. On the open Gulf coast as on previous dates.

Collections include:

- A. In lagoon at highway bridge and east along shore.
In Zone 2 to 4.
Melongena corona in abundance.
Bent-nose clam 1" long, plentiful.
Busycan perversum.
Busycon canaliculatum.
In Zone 1 and above, on shrubbery:
Littorina angulifera LE MARCK
- B. On open Gulf coast, empty shells in windrow.
Especially plentiful:
Murex pomum?
Murex sp. Thin, clean, purplish, seem almost transparent.
E chinichama arcinella - Treasure Chest.
Oliva sayana
and others.

Collector

Lee O. Miles

Collection LM 69 - 50

MARCO ISLAND,
Florida.

11th October 1950

See also LM 64, 66 and 67, and other collections referred to therein, made in these same areas.

Collected as follows, but concentrating on the East shore of the lagoon:

A. In the shallow silted portions of the Lagoon, particularly on the east shore.

B. On the open west shore of Marco Island, shells washed ashore.

C. In BIG MARCO INLET at the north end of the islet, on shallow sand bars with considerable tidal current.

Collections include:

A. Crab, horned.

Cucumber?

Busycon perversum

Busycon ~~canaliculatum~~; plentiful. *B. pyrum* Dillwyn

Sinum perspectivum

Strombus pugilis

Fasciolaria distans

Atrina rigida

B. Cardium robustum (Dinocardium r.)

Trachycardium muricatum

Echinochama arcinella (Treasure Chest)

Oliva sayana

and other washed shells.

C. Cardium robustum

Trachycardium muricatum

Busycon perversum.

Collector

Lee O. Miles

Collection LM 70 - 50

CALOOSAHATCHEE R.
Fort Myers, Florida.

12th October 1950

See also LM 40 & 49.

IN Fort Myers, at the bridge approach at the south end of the bridge on US Highway 41 over the CALOOSAHATCHEE RIVER, at low tide in this brackish tidal estuary. Water at this time and place was the brown of swamp water; at high tide it is clearer.

Collected:

Neritina reclinata SAY - the green neritina; quite abundant here on the rock and concrete abutments of bridge and bridge approach.

Collector, Lee O. Miles

Collection LM 71 - 50 SANTA ROSA SOUND,
Camp Navarre, Florida.

14th October 1950

See also collections LM 4 and 41.

Off the pier at CAMP NAVARRE in SANTA ROSA SOUND between Santa Rosa Island and the mainland between Pensacola and Fort Walton on US 98; waded out at low water as much as 150 yards from shore into water 30 inches deep; bottom sandy with little silt and with only patches of grasslike seaweed. This area is reported to have sustained a heavy population of clams at one time, but does not now.

Collections include:

Melongena corona - 2 large live specimens.
Hermit crabs in shells of Corona and Polinices.
Drill, small specimen on Oyster.
Oysters from pier piling and on sunken objects.
Crepidula plana, on an old tile.

Use of seive discovered worms and small shrimp like Callinassa. These specimens spoiled en route.

Collector Lee O. Miles

Collection LM 72 - 50 PENSACOLA BAY,
Florida.

16th October 1950

Collected on the east shore of PENSACOLA BAY at the south
end of the bridge on US Hy 98; among loose rocks along
the highway embankment and under the bridge. Bay sandy
bottomed, shallow, at this point.

Collected:

Thais floridanum - large live specimens of this
Florida Dye Shell. Plentiful here.

Collector
Lee O.Miles

Collection LM 73 - 50 MOBILE BAY,
Florida.

16th OCT. 1950

Collected on the silty mud flats along the causeway
approach of US Highway 90 to MOBILE from the East.

Collections include:

Clam shells, empty but paired.
Neritina reclinata on rocks and mud bottom at
edge of low water.

Collector
Lee O.Miles

Collection LM 74 - 50 BOLIVAR PENINSULA,
Texas.

17th October 1950.

On low and sandy BOLIVAR PENINSULA 10 miles east of
PORT BOLIVAR (opposite Galveston) on State Highway 87;
a wide sandy beach open to the Gulf of Mexico and
washed by heavy surf; offshore water very dirty.

Collected at and above low water in Zones 2 & 3:

Thais floridanum, alive and abundant.
Encrustations, Bryozoa , on shells of above.
Polinices sp. alive.
Empty shells of
 Busycon canaliculatum
 A Pholad?
 Arca sp.

Collector

Lee O.Miles

